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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicants	:	Marc HUSEMANN, et al.
U.S. Serial No.:		10/667,837
Filed	:	September 22, 2003
For	:	Preparation of UV-transparent pressure sensitive adhesives
Art Unit	:	1711
Examiner	:	Nathan M. Nutter

October 17, 2005

Mail Stop Appeal Brief - Patents
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

APPELLANTS' BRIEF ON APPEAL PURSUANT TO 37 CFR § 41.37

Sir:

This is an appeal from the final rejection of an Examiner of Art Unit 1711.

1. REAL PARTY IN INTEREST

The instant application is owned by tesa AG, record owner hereof.

2. RELATED APPEALS AND INTERFERENCES

The undersigned is not aware of any appeals, interferences, reexaminations, infringement actions or the like in any related applications.

3. STATUS OF CLAIMS

The claims pending in this application are claims 1-9; all of said claims are finally rejected and all of said claims are on appeal.

4. STATUS OF AMENDMENTS

No amendments have been filed subsequent to final rejection.

5. SUMMARY OF THE CLAIMED SUBJECT MATTER

Independent claim 1 relates to a novel process for preparing UV-transparent pressure-sensitive adhesives, having a UV transparency at 300 nm of more than 95%. In the process, an acrylic copolymer composition is formed having a weight average molecular weight of less than 300,000 g/mol, and from 2 to 20% by weight of a silicate filler having a maximum particle diameter of 50 nm is mixed into the copolymer composition.

Appellants have discovered that, by keeping the weight average molecular weight of the copolymer composition at less than 300,000 g/mol and the maximum particle diameter of the silicate filler at 50 nm, the UV transparency at 300 nm of the composition is more than 95% (page 1, last paragraph) and the difficulties encountered by the prior art are avoided. Specifically, in the prior art, the inclusion of fillers in the adhesives resulted in adhesives having relatively low cohesion, since the fillers reduced the transparency and interfered with UV cross-linking (see the discussion of Reference Example 3 on page 17). On the other hand, the complete absence of fillers also resulted in low cohesion of low

molecular weight adhesives. See the discussion of Examples 1-4 vs. Reference Examples 1 and 2 in the paragraph following Table 1 on page 17.

The present invention overcomes the deficiencies of the prior art adhesive compositions.

6. GROUNDS FOR REJECTION TO BE REVIEWED ON APPEAL

The grounds for rejection to be reviewed on appeal are the rejection of claims 1-9 under 35 U.S.C. 103(a) as obvious over Heimerl (US 5,011,492) in view of Nielsen (US 6,458,886) and Hosokawa (US 2003/0102081).

7. ARGUMENTS

Heimerl, in Example 2, discloses a UV-cross-linkable acrylate self-adhesive composition. The molecular weight of the adhesive composition is not disclosed, and the adhesive composition does not include any filler. This reference therefore neither teaches nor suggests anything about two of the important features of Appellants' invention.

Nielson, on the other hand, is concerned with SIS type block copolymers having from e.g. 25 – 55 wt. % of water swellable hydrocolloids. The triblock copolymer has a molecular weight of 150,000 – 300,000. The compositions may include pigments, such as zinc oxide or titanium dioxide (col. 4, lines 55 et seq.). The compositions may also include fillers, such as clay, to add to the cohesion of the adhesive (col. 4, line 66). This is clearly not an acrylate composition, and is not UV cross-linkable and certainly would not be expected to be UV transparent.

The Nielson compositions have absolutely nothing to do with the kinds of compositions of the Heimerl reference, and the mere fact that Nielson's compositions have a given molecular weight range suggests absolutely nothing about a molecular weight range for Heimerl's compositions. The existence of a 300,000 g/mol molecular weight SIS block copolymer would not suggest anything whatsoever to those concerned with acrylate copolymers, as the relationship of molecular weight to properties of an SIS block copolymer would be understood to be completely different than the relationship of molecular weight to properties of an acrylate.

No person skilled in the art reading Nielson would be motivated to go to Heimerl and make his molecular weight 300,000 g/mol or less! The SIS of Nielson is so different than the acrylate of Heimerl that nothing about either suggests anything about the other.

The Hosokawa reference is concerned with a process for preparing a pressure sensitive adhesive composition, wherein a monomer is mixed with an organophilic layered clay mineral, a polymerization initiator and an organic solvent; and an appropriate external action is then exerted on the mixture to intercalate part of the monomer, polymerization initiator and organic solvent into interstices of the organophilic clay material. This mixture is then subjected to solvent removal and polymerization. As a result, the clay mineral undergoes interlayer separation due to the polymer formed in the interstices of the clay mineral and hence comes to have a layer-to-layer distance of 100 Å.

Nowhere in this reference is there to be found any teaching or suggestion of an acrylate composition having a weight average molecular weight of less than 300,000 g/mol in which there is mixed 2 to 20% weight of a silicate filler having a maximum particle diameter of 50 nm. There is absolutely no discussion of the molecular weight of the adhesive compositions, and there is absolutely no discussion of the size of the filler particles.

Nowhere in this combination of references is there any guidance that could possibly lead those skilled in the art to a UV-transparent pressure sensitive adhesive made from the monomer composition recited in Appellants' claims and having a weight average molecular weight of less than 300,000 g/mol within which there is mixed from 2 – 20% by weight of a silicate filler having a maximum particle diameter of 50 nm.

The rejection of claims 1-9 under 35 U.S.C. 103(a) as obvious over Heimerl (US 5,011,492) in view of Nielsen (US 6,458,886) and Hosokawa (US 2003/102081) is not justified, cannot be sustained, and should be REVERSED.

8. CONCLUSION

Wherefore it is submitted that the final rejection is in error and should be **REVERSED**.

AUTHORIZATION TO CHARGE FILING FEE TO DEPOSIT ACCOUNT

Appellant is:

[ ] a small entity

[X] other than a small entity

It is requested that the fee for the filing of the Brief on Appeal be charged to the undersigned's Deposit Account No. 14-1263.

Please charge:

[ ] $ 250.00 for small entity

[X] $500.00 for other than small entity.

CONDITIONAL PETITION FOR EXTENSION OF TIME

If any extension of time for this response is required, Appellants request that this be considered a petition therefor. Please charge the required Petition fee to Deposit Account No. 14-1263.

ADDITIONAL FEE

Please charge any insufficiency of fees, or credit any excess to our Deposit Account No. 14-1263.

Respectfully submitted,
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I hereby certify that this correspondence is being transmitted via facsimile, no. 571-273-8300 to the United States Patent and Trademark Office, addressed to: Mail Stop Appeal Brief - Patents, Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450 on October 17, 2005.

By _____
Zsuzsa Schuster
Date October 17, 2005

9. CLAIMS APPENDIX

The claims are appeal read as follows:

1. A process for preparing UV-transparent pressure sensitive adhesives which have a UV transparency at 300 nm of more than 95%, comprising the steps of:

(a) polymerizing a monomer composition comprising

(a1) from 75 to 99.8% by weight of acrylic esters and/or methacrylic esters of the formula $CH_2=CH(R_1)(COOR_2)$, where R_1 is H or CH_3 and R_2 is an alkyl chain having 1 to 20 carbon atoms;

(a2) from 0 to 10% by weight of acrylic acid and/or methacrylic acid of the formula $CH_2=CH(R_1)(COOH)$, where R_1 is H or CH_3;

(a3) from 0.2 to 5% by weight of olefinically unsaturated monomers which contain at least one UV-crosslinking functional group per monomer; and

(a4) from 0 to 20% by weight of olefinically unsaturated monomers which are different than the olefinically unsaturated monomers (a3) and which contain at least one functional group per monomer;

to form a copolymer composition having a weight average molecular weight M_w of less than 300,000 g/mol, and

(b) mixing in from 2 to 20% by weight, based on the weight of copolymer composition, of a silicate filler before or after the polymerization of the monomer composition in step (a), the silicate filler having a maximum particle diameter of 50 nm.

2. The process as claimed in claim 1, comprising the further step of adjusting the residual solvent content of the pressure sensitive adhesive to less than 1%, based on the weight of pressure sensitive adhesive.

3. The process as claimed in claim 2, wherein the residual solvent content is adjusted to less than 0.2%, based on the weight of pressure sensitive adhesive.

4. The process as claimed in claim 1, wherein the copolymer composition obtained in step (a) is melted and then the silicate filler is added and distributed homogenously in the melted copolymer composition.

5. The process as claimed in claim 1, wherein the polymerization in step (a) is a free-radical addition polymerization.

6. The process as claimed in claim 5, wherein the monomer composition is heated to a temperature of between 50 and 160°C.

7. The process as claimed in claim 1, wherein the monomer composition in step (a) is polymerized in bulk.

8. The process as claimed in claim 7, wherein the polymerization is initiated with UV light, from 10 to 30% of the monomer composition is polymerized, and the resulting mixture is transferred to water and polymerized to completion.

9. The process as claimed in claim 1, wherein the monomer composition in step (a) is polymerized by anionic addition polymerization.

10. EVIDENCE APPENDIX

No evidence under §§ 1.130, 1.131, or 1.132 has been submitted.

11. RELATED PROCEEDINGS APPENDIX

There have been no decisions rendered by a court or the Board in any proceeding identified pursuant to paragraph (c)(1)(ii) of 37 CFR 41.37